

Jet Propulsion Laboratory
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January 18, 2007
Refer to 9110-07-01 AEA: DM

TO: Distribution

FROM: David Morris

SUBJECT: Minutes for the Joint Users Resource Allocation Planning Committee Meeting held January 18, 2007.

NEXT JURAP MEETING:
Thursday, March 15, 2007
JPL Bldg. 303, Room 401 1:00 p.m.

Attendees:

A. Andujo	L. Efron	J. Hall	B. Yetter
G. Burke	J. Frautnick	C. Hernandez	K. Zamora
S. Chhan	D. Garibek	D. Morris	

The Joint Users Resource Allocation Planning Committee meets monthly to review the status of Flight Projects, the requirements of other resource users, and to identify future requirements and outstanding conflicts. The previous meeting was held on November 16, 2006 at the Jet Propulsion Laboratory.

Introductory Remarks – D. Morris

Welcomed the attendees to the JURAP meeting and announced that this JURAP meeting would include a presentation from J. Hall on the Voyager 2 Hybic Swap Plan – updated status since last JURAP. The next Interplanetary Network Customer Forum that will include the Resource Allocation Review will be February 13. The preliminary “redbook” will be out late next week (January 26) or very early the following week for review; we request Missions and Projects to respond with feedback. Other presentation includes S. Chhan on DSN Downtime and RAPS Status.

Other topics briefly discussed are as follows:

- Cassini Project has numerous key events throughout the rest of the year
- Rosetta Mars Swingby is February 25, 2007
- New Horizons' Jupiter Flyby is February 28, 2007
- Ulysses Project begins their year long Nutation event around February 14, 2007
- Mars Global Surveyor still has no signal since November 2, 2006
- Both Deep Impact and Stardust are still being tracked in order to maintain health as both were selected as a potential Discovery Mission of Opportunity
- GSSR has requested some Venus Radar with Greenbank radio telescope in June 2007
- RAPS Conflict Negotiation meetings will be held on Wednesday and alternate Fridays (to avoid JPL's regular day off) until further notice to catch up on the scheduling
- SPS moving along since the software system soak start on January 16, 2007
- SSAS (also known as SSS or SSA) held a PDR. K. Zamora noted that there were some Review Board concerns on whether all objectives were met at the PDR. This is a scheduling tool modification within SPS.

SPECIAL PRESENTATION

Voyager 2 Hybic Swap Plan, Updated Status – Jeff Hall

The previous command windows to perform the permanent Hybic Swap was postponed until further notice due to further investigation required to determine the issues with the Hybic 2.

For complete presentation detail, please refer to link: <http://rapweb.jpl.nasa.gov/jurap.html>

Resource Analysis Team

DSN Antenna Downtime Status and Forecast – Steven Chhan

Summarize the changes to 2007 – 2010 Downtime Schedules.

Changes to 2007 Downtime Schedule

- DSS-43 Grouting task to occur in weeks 5 – 7 for 12 days
- DSS-43 Painting task to occur in week 13 for 7 days
- DSS-46 Hydraulics task to occur in week 20 for 5 days
- DSS-66 Hydraulics task to occur in week 22 for 5 days
- DSS-63 Load Sensors Install to occur in weeks 24 – 37 for 97 days
- DSS-14 Grouting – NIB and ACR S/W upgrade Proposed in weeks 40 – 42 for 20 days
- DSS-45 Antenna Controller Replacement proposed in weeks 40 – 46 for 49 days
- DSS-65 200W S-Band U/L and Depot Level Maintenance – NIB proposed for weeks 44 – 49 for 42 days

Changes to 2008 Downtime Schedule

- DSS-34 Downtime for Ka-Band Phase 2 Install with DLM – NIB proposed for weeks 29 – 39 for 77 days

Changes to 2009 Downtime Schedule

- DSS-24 Downtime for Ka-Band Phase 2 Install with DLM – NIB proposed for weeks 28 – 38 for 77 days

Changes to 2010 Downtime Schedule

- DSS-54 Downtime for Ka-Band Phase 2 Install with DLM – NIB proposed for weeks 28 – 38 for 77 days

For a complete listing of Antenna Downtimes, visit the following link for the RAPSO website:

<http://rapweb.jpl.nasa.gov/planning.htm>

RAPS & Mid-Range Status – D. Garibek

- Week 09 were released to DSN Scheduling, weeks 11 – 12 have remaining facility and equipment conflicts, weeks 15 – 16 are due to be released to remote users. The Mid-Range Scheduling process has negotiated schedules 7 weeks ahead of real-time. Currently, there are 7 weeks of conflict-free schedules. Conflict Resolution is required

Ongoing Special Studies / Activities

- RAR for February 2007
- Downtime Planning



VOYAGER HYBIC SWAP STATUS

JEFFERSON C. HALL

18 JANUARY 2007



HYBIC Swap Test Status



- **REDUNDANT HYBIC TEST & TEMPORARY SWAP**

- **PURPOSE OF THE TEST**

- Validate operability of HYBIC 1 and health of celestial sensors
- Refine sun sensor bias offsets between HYBIC 2 and 1
- Gather information in preparation for a permanent swap and calibration or further testing

- The HYBIC test was performed on 11/30/2006, DOY 335/02:32:37 UTC (6:32 PM PST). All events executed as planned. HYBIC 1 functioned properly and the pointing offset data was obtained.
- At the time of the swap, the available power dropped to an unexpected level.
- The MAG instrument status indicated that the Out-Board flipper status had changed and that the flipper is now ON. The instrument temperature increased significantly.

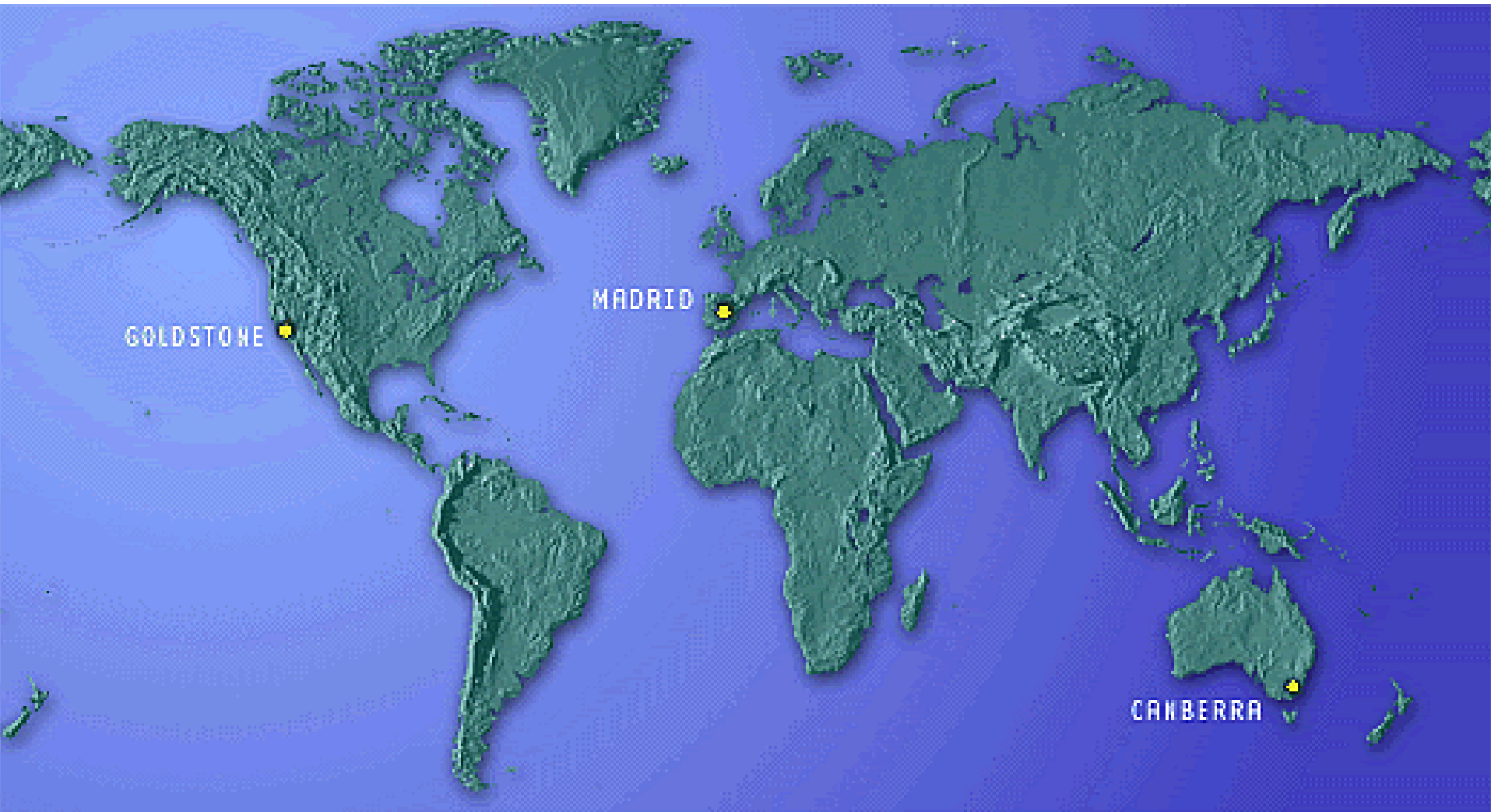


HYBIC Swap Test Status



- Our investigation revealed that one of the commands issued to reinitialize HYBIC 1 also caused the Out-Board Flipper ON command to be issued. This caused an additional 10.2 watt of power consumption. This similar anomaly happened once before in 1998. The cause was thought to be contamination in the 2N2222A transistors in the Power System (power command decoder).
- It's believed that the excessive heat caused the wax pellet actuators that move the flipper back and forth from the "forward" to "reverse" position to melt. Data indicate that the flipper position is "reverse", near 0°.
- Early indications are that the Out-board MAG is still functioning. We are awaiting more feedback from the PI's.
- We have formed a team of consultants to investigate the cause of this anomaly.
- The permanent swap has been delayed until this investigation is complete.

DSN Antenna Downtime Status and Forecast



<http://rapweb.jpl.nasa.gov/planning>

Antenna Downtime Status and Forecast

Changes to 2007 Downtime Schedule

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Changes to 2008 Downtime Schedule

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Changes to 2010 Downtime Schedule

- ❑ DSS-54 Downtime for Ka-Band Phase 2 Install with DLM – NIB proposed for weeks 28 – 38 for 77 days

All previous downtime proposals have been agreed to by all DSN Missions/Users through the INCF/RAR, JURAP or Mid-Range Scheduling Process

Antenna Downtime Status and Forecast

DSN Antenna Downtime Report

2007							
Site	Description	Start	End	Duration (Days)	Weeks	Start DOY	End DOY
DSS 16	Extended Downtime	01/30/2006 16:00	12/31/2009 23:59	1432	05 - 53	030	365
DSS 27	Wheel Replacement	01/18/2007 16:00	01/23/2007 23:59	6	03 - 04	018	023
DSS 34	Painting	01/18/2007 21:00	01/21/2007 07:00	3	03 - 03	018	020
DSS 45	Elevation Cable Wrap	01/30/2007 18:00	02/04/2007 18:00	5	05 - 05	030	034
DSS 43	Grouting	02/04/2007 21:00	02/16/2007 23:59	12	05 - 07	035	046
DSS 55	X/Ka LNA Maintenance	02/18/2007 15:00	02/21/2007 15:00	3	07 - 08	049	051
DSS 65	Antenna Drive Cabinet Refurbishment	02/26/2007 00:00	04/16/2007 23:59	50	09 - 16	057	106
DSS 43	Painting	03/26/2007 01:00	04/02/2007 23:59	7	13 - 13	085	091
DSS 46	Painting	04/03/2007 21:00	04/07/2007 07:00	4	14 - 14	093	096
DSS 14	Grouting	04/27/2007 00:00	05/09/2007 23:59	12	17 - 19	117	128
DSS 14	HALON Replacement - NIB	04/27/2007 00:00	05/09/2007 23:59	12	17 - 19	117	128
DSS 46	Hydraulics	05/14/2007 00:00	05/19/2007 23:59	5	20 - 20	134	138
DSS 66	Hydraulics Task	05/28/2007 00:00	06/01/2007 23:59	5	22 - 22	148	152
DSS 63	Hydrostatic Bearing Replacement	06/12/2007 00:00	09/16/2007 23:59	97	24 - 37	163	259
DSS 63	Depot Level Maintenance - NIB	06/12/2007 00:00	09/16/2007 23:59	97	24 - 37	163	259
DSS 63	Load Sensors Install - NIB	06/12/2007 00:00	09/16/2007 23:59	97	24 - 37	163	259
DSS 45	Antenna Drive Cabinet Refurbishment	08/27/2007 00:00	10/01/2007 23:59	36	35 - 40	239	274
DSS 45	S-Band 200W U/L Install - NIB	08/27/2007 00:00	10/01/2007 23:59	36	35 - 40	239	274
DSS 45	Depot Level Maintenance - NIB	08/27/2007 00:00	10/01/2007 23:59	36	35 - 40	239	274
DSS 14	ACR S/W Install - Proposed	10/01/2007 00:00	10/21/2007 23:59	20	40 - 42	274	293
DSS 45	Antenna Controller Replacement - Proposed	10/01/2007 00:00	11/19/2007 23:59	49	40 - 46	274	322
DSS 65	200W S-Band U/L - Proposed	10/29/2007 00:00	12/10/2007 23:59	42	44 - 49	302	343
DSS 65	Depot Level Maintenance - NIB - Proposed	10/29/2007 00:00	12/10/2007 23:59	42	44 - 49	302	343

Antenna Downtime Status and Forecast

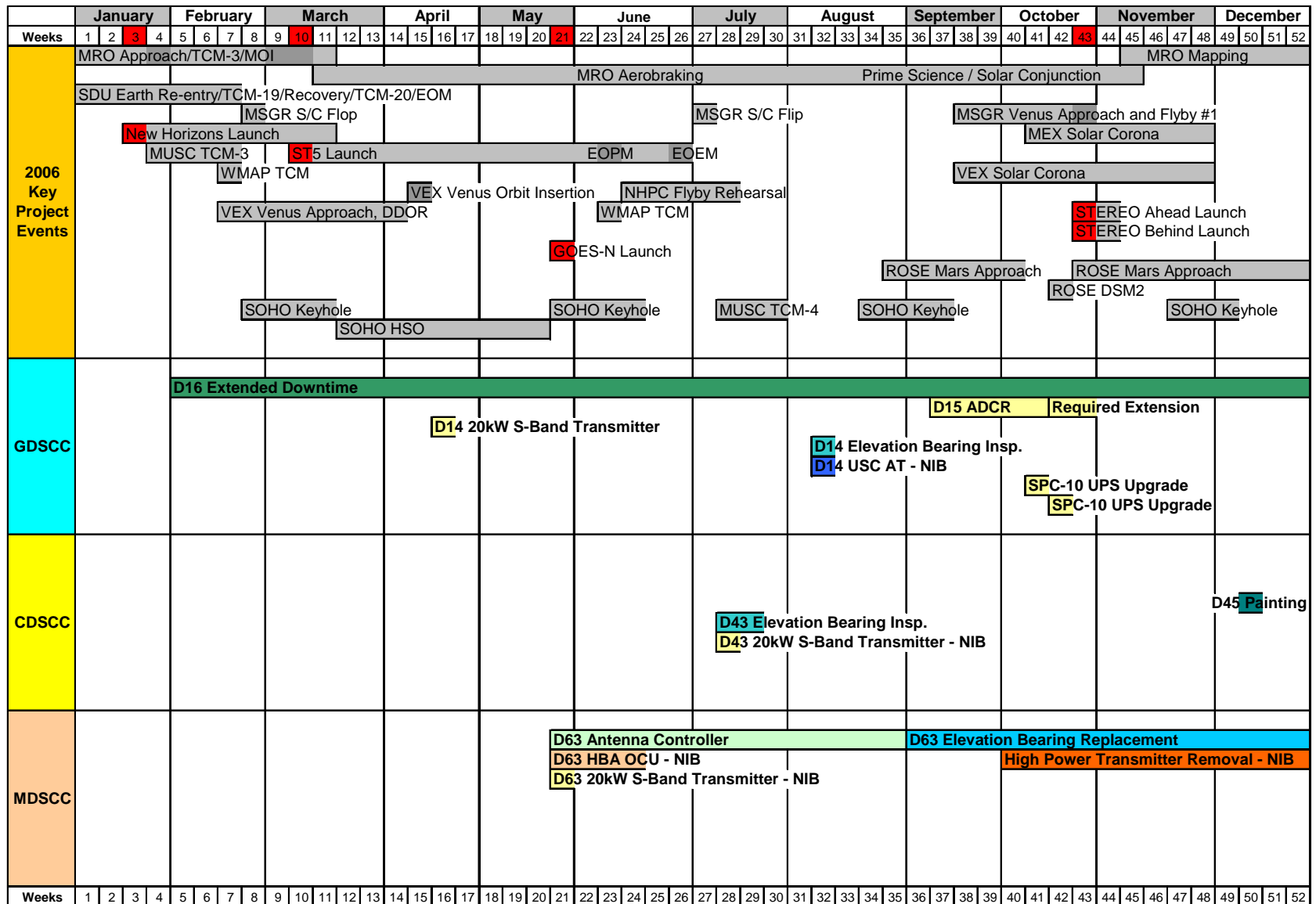
DSN Antenna Downtime Report

2008							
Site	Description	Start	End	Duration (Days)	Weeks	Start DOY	End DOY
DSS 54	X/Ka Band Install	02/04/2008 00:00	05/11/2008 23:59	98	06 - 19	035	132
DSS 54	AZ Track Refurbishment - NIB	02/04/2008 00:00	05/11/2008 23:59	98	06 - 19	035	132
DSS 54	AZ Data Gear Replacement - NIB	02/04/2008 00:00	05/11/2008 23:59	98	06 - 19	035	132
DSS 54	Q-Band Installation - NIB	02/04/2008 00:00	05/11/2008 23:59	98	06 - 19	035	132
DSS 54	Depot Level Maintenance - NIB	02/04/2008 00:00	05/11/2008 23:59	98	06 - 19	035	132
DSS 15	Life Extension	02/18/2008 00:00	05/11/2008 23:59	84	08 - 19	049	132
DSS 15	Depot Level Maintenance - NIB	02/18/2008 00:00	05/11/2008 23:59	84	08 - 19	049	132
DSS 34	Ka-Band Phase 2 Install - Proposed	07/14/2008 00:00	09/29/2008 23:59	77	29 - 39	196	272
DSS 34	Depot Level Maintenance - NIB - Proposed	07/14/2008 00:00	09/29/2008 23:59	77	29 - 39	196	272
DSS 43	Life Extension	09/29/2008 00:00	03/29/2009 23:59	182	40 - 13	273	088

2009							
Site	Description	Start	End	Duration (Days)	Weeks	Start DOY	End DOY
DSS 63	Life Extension	03/30/2009 00:00	09/27/2009 23:59	182	14 - 39	089	270
DSS 24	Ka-Band Phase 2 Install - Proposed	07/06/2009 00:00	09/21/2009 23:59	77	28 - 38	187	263
DSS 24	Depot Level Maintenance - NIB - Proposed	07/06/2009 00:00	09/21/2009 23:59	77	28 - 38	187	263
DSS 14	Life Extension	09/28/2009 00:00	03/28/2010 23:59	182	40 - 12	271	087

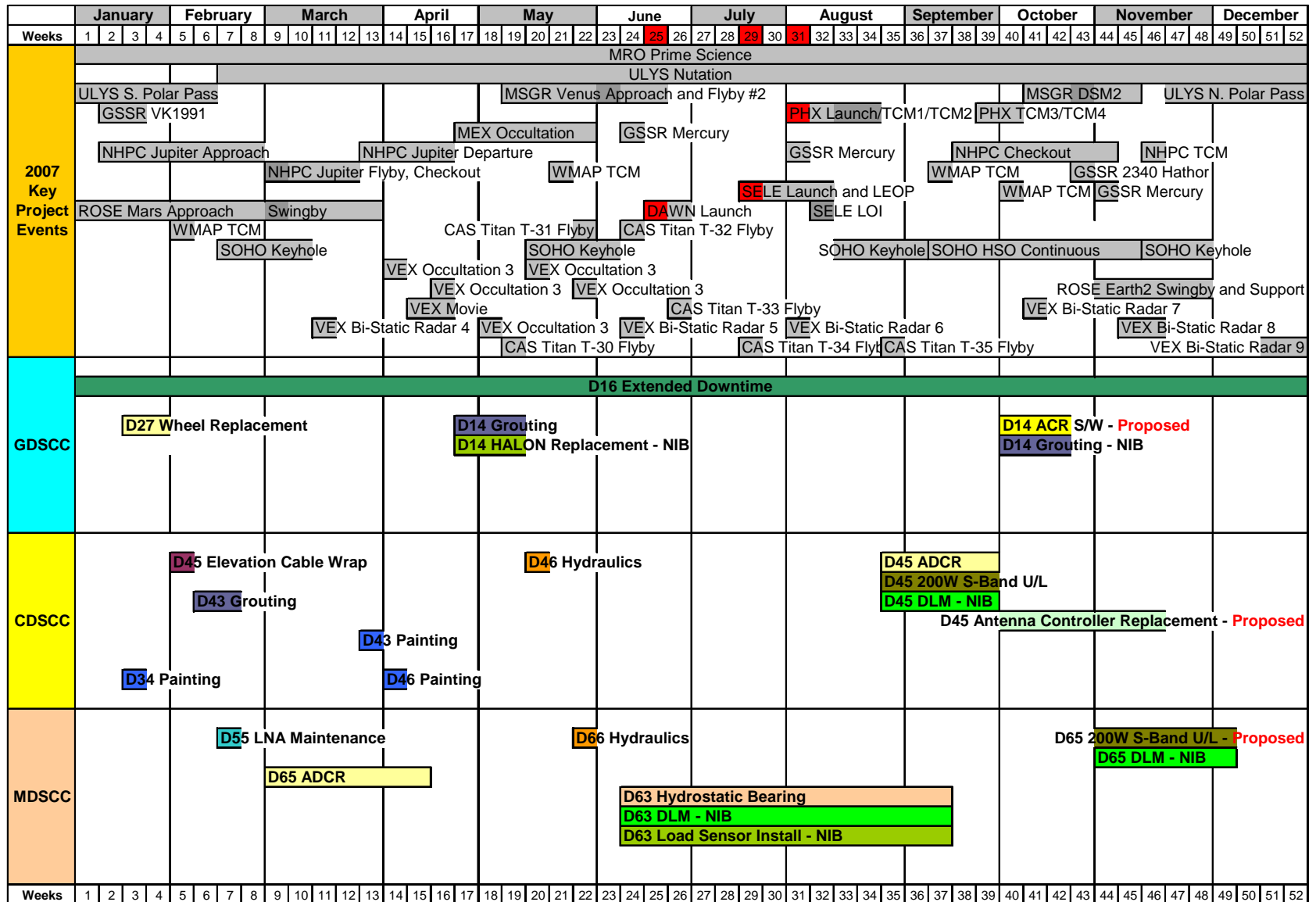
2010							
Site	Description	Start	End	Duration (Days)	Weeks	Start DOY	End DOY
DSS 54	Depot Level Maintenance - NIB - Proposed	07/12/2010 00:00	09/27/2010 23:59	77	28 - 38	193	269
DSS 54	Ka-Band Phase 2 Install - Proposed	07/12/2010 00:00	09/27/2010 23:59	77	28 - 38	193	269

Antenna Downtime Status and Forecast 2006



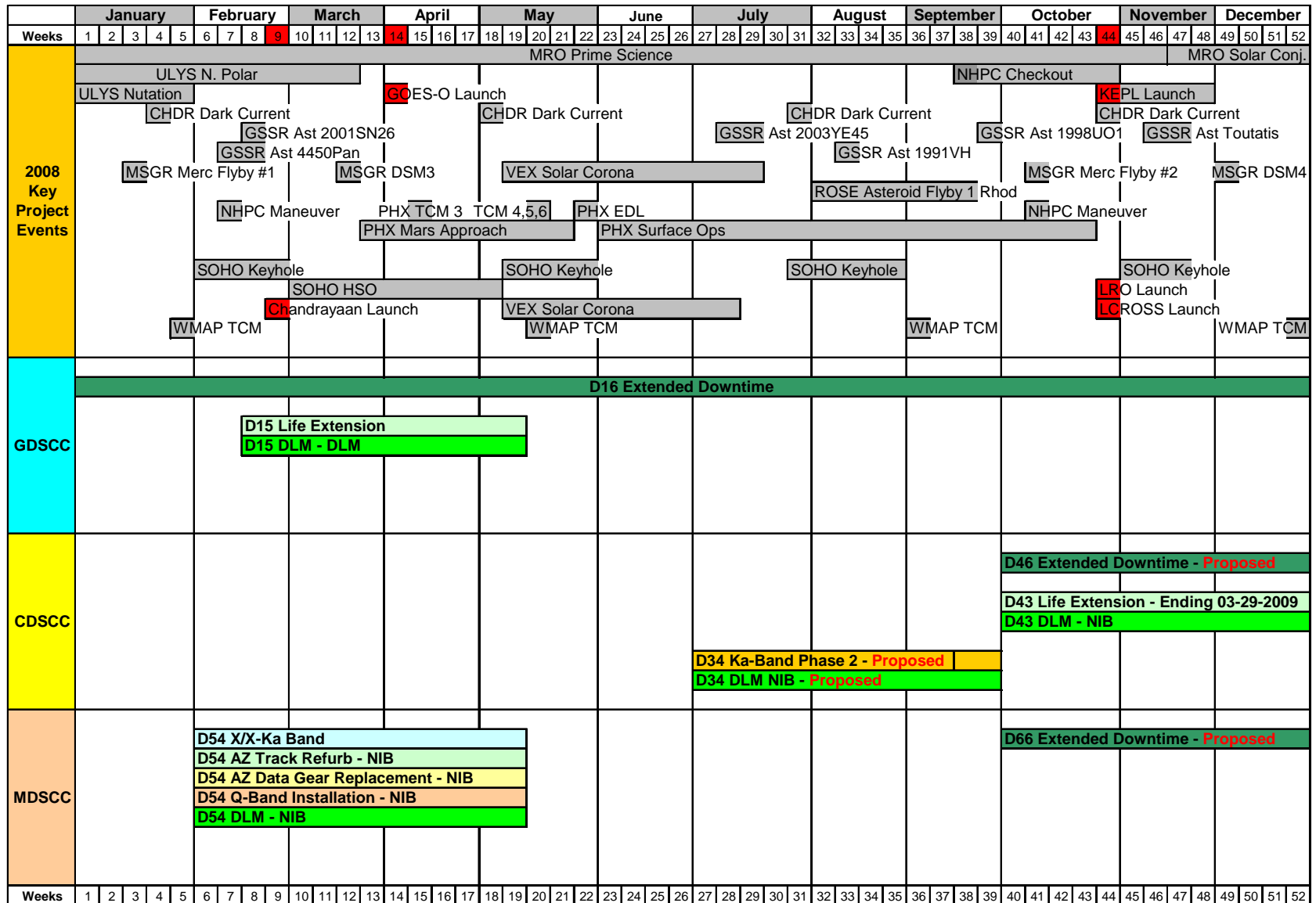
Revised: January 9, 2007

Antenna Downtime Status and Forecast 2007



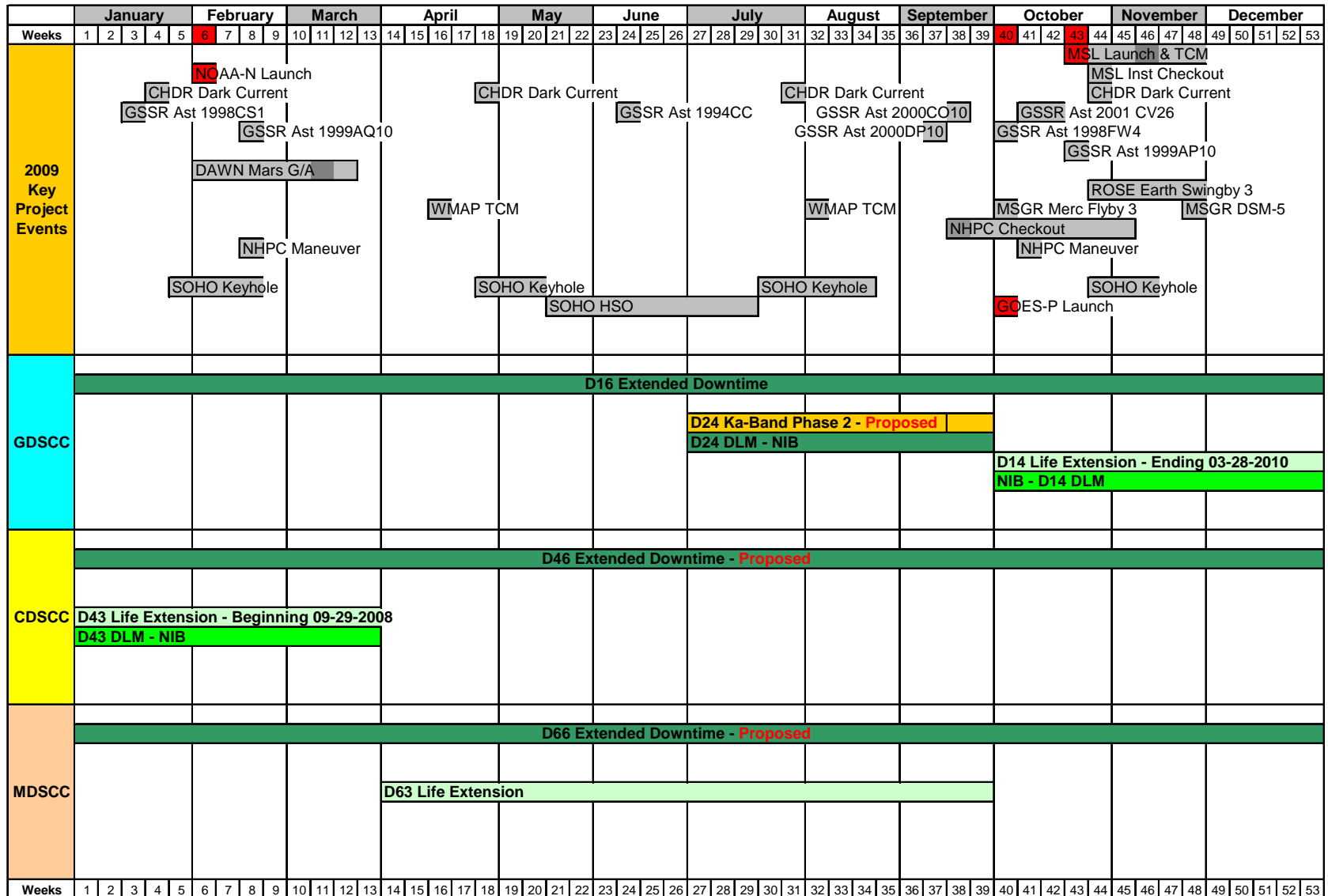
Revised: January 8, 2007

Antenna Downtime Status and Forecast 2008



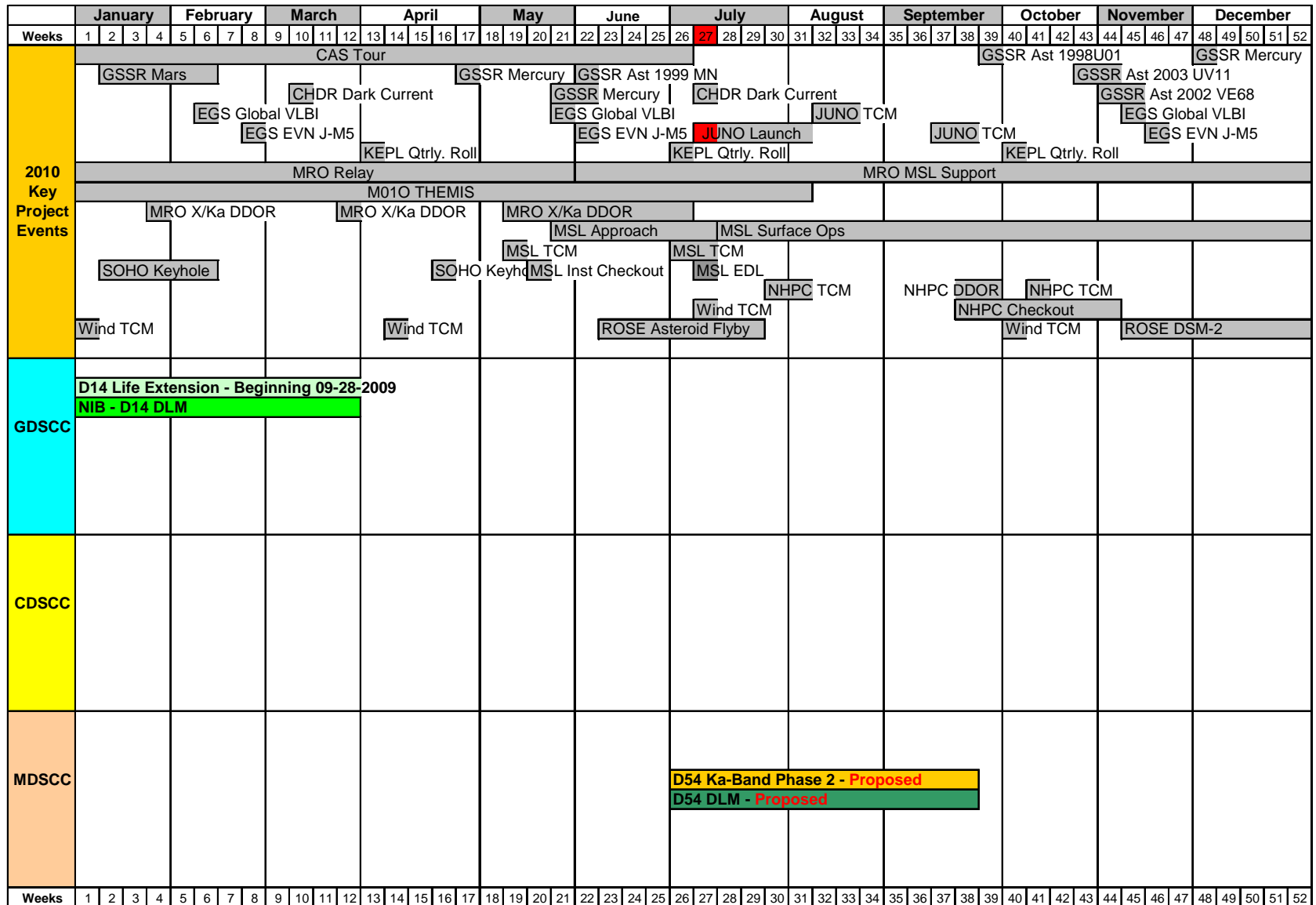
Revised: December 5, 2006

Antenna Downtime Status and Forecast 2009



Revised: December 5, 2006

Antenna Downtime Status and Forecast 2010



Revised: December 5, 2006

Antenna Downtime Status and Forecast

DSN Resource Implementation Planning Matrix By Subnet

Complex	Station	Subnet	S-Band		X-Band		Ka-Band		NSP/ TT&C
			Down	Up	Down	Up	Down	Up	
10	DSS-16	26M	✓	✓	N/A	N/A	N/A	N/A	N/A
40	DSS-46	26M	✓	✓	N/A	N/A	N/A	N/A	N/A
60	DSS-66	26M	✓	✓	N/A	N/A	N/A	N/A	N/A
10	DSS-27	34HSB	✓	✓	N/A	N/A	N/A	N/A	✓ ✓ ✓
10	DSS-24	34B1	✓	✓	✓	✓	N/A	N/A	✓
40	DSS-34	34B1	✓	✓	✓	✓	✓ ✓ ✓	N/A	✓
60	DSS-54	34B1	✓	✓	✓	✓	04/15/08	N/A	✓
10	DSS-25	34B2	N/A	N/A	✓	✓	✓	N/A	✓
10	DSS-26	34B2	N/A	N/A	✓	✓	✓	N/A	✓
60	DSS-55	34B2	N/A	N/A	✓	✓	✓ ✓ ✓	N/A	✓
10	DSS-15	34HEF	✓	N/A	✓	✓	N/A	N/A	✓
40	DSS-45	34HEF	✓	11/11/07	✓	✓	N/A	N/A	✓
60	DSS-65	34HEF	✓	12/19/07	✓	✓	N/A	N/A	✓
10	DSS-14	70M	✓	✓	✓	✓	N/A	N/A	✓
40	DSS-43	70M	✓	✓	✓	✓	N/A	N/A	✓
60	DSS-63	70M	✓	✓	✓	✓	N/A	N/A	✓
N/A = Capability Not Planned xx/xx/xx = Capability Date Recently Changed As of: 12/05/06 ✓ ✓ ✓ = Capability Recently Exists ✓ = Capability Exists									

JOINT USERS RESOURCE ALLOCATION PLANNING COMMITTEE

Resource Analysis Team

January 18, 2007

Steven Chhan



MID-RANGE SCHEDULING STATUS

◆ RESOURCE NEGOTIATION STATUS

- 2007 WEEK 09 (THRU 03/04/2007) WERE RELEASED TO DSN SCHEDULING ON 01/17/2007.
 - 2007 WEEKS 15 - 16 (THRU 04/22/2007) ARE DUE TO BE RELEASED TO THE REMOTE USERS ON 01/22/2007.
 - 2007 WEEKS 11 - 12 (THRU 03/25/2007) HAVE REMAINING FACILITY AND EQUIPMENT CONFLICTS.
- ◆ The Mid-Range Scheduling process has negotiated schedules 7 weeks ahead of real-time. Currently, there are 7 weeks of conflict-free schedules. Conflict Resolution is required for the following four (4) weeks: 03/12/2007 through 04/08/2007.

ON-GOING SPECIAL STUDIES/ACTIVITIES

- RAR for February 15, 2007 - ongoing
- Downtime Planning - ongoing

– Ongoing / Approved Projects –

Project	Acronym	Launch or Start	EOPM	EOEM
DSN Antenna Calibration	DSN	--	--	--
DSS Maintenance	DSS	--	--	--
DSN ZDD Calibration	DSN	11/01/04	--	--
European and Global VLBI Systems	EGS	--	--	--
Ground Based Radio Astronomy	GBRA	--	--	--
Reference Frame Calibration (Cat M&E and Clock Sync)	DSN	--	--	--
Space Geodesy	SGP	--	--	--
Voyager 2	VGR2	08/20/77	10/15/89	12/31/10
Voyager 1	VGR1	09/05/77	12/31/80	12/31/10
Goldstone Solar System Radar	GSSR	04/01/85	--	--
Ulysses	ULYS	10/06/90	09/11/95	03/30/08
Geotail	GTL	07/24/92	07/24/95	10/01/08
Wind	WIND	11/01/94	11/01/97	10/01/11
SOHO	SOHO	12/02/95	05/02/98	10/01/11
Polar	POLR	02/22/96	08/23/97	03/31/07
Mars Global Surveyor	MGS	11/07/96	02/01/01	11/03/09
Advance Composition Explorer	ACE	08/25/97	02/01/01	10/01/13

– Ongoing / Approved Projects –

Project	Acronym	Launch or Start	EOPM	EOEM
Cassini	CAS	10/15/97	06/30/08	06/30/10
Chandra X-Ray Observatory	CHDR	07/23/99	07/24/09	07/24/14
Imager for Magnetopause-to-Aurora Global Exploration	IMAG	03/25/00	05/30/02	10/01/11
Cluster 2 - S/C #2 (Samba)	CLU2	07/16/00	02/15/03	12/31/09
Cluster 2 - S/C #3 (Rumba)	CLU3	07/16/00	02/15/03	12/31/09
Cluster 2 - S/C #1 (Salsa)	CLU1	08/09/00	02/15/03	12/31/09
Cluster 2 - S/C #4 (Tango)	CLU4	08/09/00	02/15/03	12/31/09
Mars Odyssey 2001	M01O	04/07/01	08/24/04	12/31/10
Wilkinson Microwave Anisotropy Probe	WMAP	06/30/01	10/01/03	09/30/10
Advanced Tracking and Observational Techniques (ATOT)	ATOT	02/01/02	12/31/08	- - -
International Gamma Ray Astrophysics Lab	INTG	10/17/02	12/18/04	12/16/10
Hayabusa (MUSES - C)	MUSC	05/09/03	06/10/07	- - -
Mars Express Orbiter	MEX	06/02/03	02/11/06	12/31/08
Spirit (Mars Exploration Rover - A)	MER2	06/10/03	04/06/04	09/30/08
Opportunity (Mars Exploration Rover - B)	MER1	07/07/03	04/27/04	09/30/08
Spitzer Space Telescope (SIRTF)	STF	08/25/03	05/31/09	05/31/14
Rosetta	ROSE	02/26/04	12/31/15	- - -

– Ongoing / Approved Projects –

Project	Acronym	Launch or Start	EOPM	EOEM
Messenger	MSGR	08/03/04	03/19/12	- - -
Mars Reconnaissance Orbiter	MRO	08/12/05	12/31/10	12/31/15
Venus Express	VEX	11/09/05	09/24/07	01/22/09
New Horizons	NHPC	01/19/05	04/17/16	TBD
Space Technology 5 - S/C #1	ST51	03/11/06	06/11/06	06/30/06
Space Technology 5 - S/C #2	ST52	03/11/06	06/11/06	06/30/06
Space Technology 5 - S/C #3	ST53	03/11/06	06/11/06	06/30/06
Stereo Ahead	STA	10/25/06	09/26/08	09/26/11
Stereo Behind	STB	10/25/06	09/26/08	09/26/11
Dawn	DAWN	06/20/07	07/04/15	TBD
Phoenix	PHX	08/03/07	10/26/08	TBD
Lunar Reconnaissance Orbiter	LRO	10/31/08	09/31/10	TBD
Lunar Crater Observation and Sensing Satellite	?	10/31/08	01/31/09	TBD
Kepler	KEPL	11/01/08	12/01/12	- - -
Mars Science Laboratory 2009	MSL	10/25/09	03/04/12	TBD

– Advanced / Planning Projects –

Project	Acronym	Launch or Start	EOPM	EOEM
SELENE	SELE	02/01/07	02/21/07	TBD
Chandrayaan – 1	?	03/01/08	03/01/10	TBD
Juno	JUNO	07/08/10	09/18/16	TBD
Space Interferometry Mission	SIM	10/01/14	04/01/19	04/01/24
Mars Scout 2011	M11L	01/31/12	09/10/14	TBD
James Webb Space Telescope	JWST	08/01/11	07/31/16	TBD
Mars Orbiter 2013	M13O	11/28/13	08/21/16	TBD